IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): An image forming apparatus comprising:

a plurality of image carriers;

a color image forming unit that sequentially transfers toner images formed on each of the image carriers onto a recording medium that is carried on a transfer belt to form a color image;

an optical detecting unit that transfers a reference pattern for density detection formed on each of the image carriers for each color onto the transfer belt, and detects the reference pattern transferred; and

an image density control unit that controls image density based on a result of the detection by the optical detecting unit, wherein

the optical detecting unit detects both regular reflection light and diffuse reflection light from a detection target simultaneously, and

the image density control unit (1) determines a range of calculated ratios between a regular reflection light and a diffuse reflection light, (2) selects a minimum value from the determined range of calculated ratios, and (3) controls the image density based on a value obtained by subtracting a result of multiplying [[a]] the diffuse reflection output by [[a]] the minimum value ~~of a ratio~~ selected from the determined range of calculated ratios ~~between a regular reflection output and the diffuse reflection output~~ from the regular reflection output of the reference pattern for each color detected by the optical detecting unit.

Claim 2 (Original): The image forming apparatus according to claim 1, wherein the image density control unit controls the image density based on a relative ratio between the

value obtained by subtracting the result of multiplying the diffuse reflection output by a minimum value of a ratio between the regular reflection output and the diffuse reflection output from the regular reflection output of the reference pattern for each color detected by the optical detecting unit, and a value obtained by subtracting a result of multiplying the diffuse reflection output by a minimum value of a ratio between the regular reflection output and the diffuse reflection output from the regular reflection output in a background of the transfer belt, detected by the optical detecting unit.

Claim 3 (Original): The image forming apparatus according to claim 1, wherein

the optical detecting unit includes a light source that emits light, and

the image density control unit uses a difference between the regular reflection output at an ON time of the light source and the regular reflection output at an OFF time of the light source as the regular reflection output.

Claim 4 (Original): The image forming apparatus according to claim 1, wherein

the optical detecting unit includes a light source that emits light, and

the image density control unit uses a difference between the diffuse reflection output at an ON time of the light source and the diffuse reflection output at an OFF time of the light source as the diffuse reflection output.

Claim 5 (Original): The image forming apparatus according to claim 1, wherein

the optical detecting unit includes a first photodetector that receives the regular reflection light from the detection target, and a second photodetector that receives the diffuse reflection light from the detection target, and

light-output characteristics of the two photodetectors are the same.

Claim 6 (Original): The image forming apparatus according to claim 1, wherein the optical detecting unit detects light from three or more of the reference patterns formed for each color.

Claim 7 (Currently Amended): The image forming apparatus according to claim 1, wherein the optical detecting unit is arranged not to be opposite to a portion of the transfer belt along which the recording medium is carried.

Claim 8 (Original): The image forming apparatus according to claim 1, wherein the optical detecting unit further detects a misalignment of the transfer belt.

Claim 9 (Currently Amended): An image forming apparatus comprising:

a plurality of image carriers;

a color image forming unit that sequentially transfers toner images formed on each of the image carriers onto an intermediate transfer body to form a color image on the intermediate transfer body, and collectively transfers the color image onto a recording medium;

an optical detecting unit that transfers a reference pattern for density detection formed on each of the image carriers for each color onto the intermediate transfer body, and detects the reference pattern transferred; and

an image density control unit that controls image density based on a result of the detection by the optical detecting unit, wherein

the optical detecting unit detects both regular reflection light and diffuse reflection light from a detection target simultaneously, and

the image density control unit (1) determines a range of canceled ratios between a regular refection light and a diffuse reflection light, (2) selects a minimum value from the determined range of calculated ratios, and (3) controls the image density based on a value obtained by subtracting a result of multiplying [[a]] the diffuse reflection output by [[a]] the minimum value ~~of a ratio~~ selected from the determined range of calculated ratios ~~between a regular reflection output and the diffuse reflection output~~ from the regular reflection output of the reference pattern for each color detected by the optical detecting unit.

Claim 10 (Original): The image forming apparatus according to claim 9, wherein the image density control unit controls the image density based on a relative ratio between the value obtained by subtracting the result of multiplying the diffuse reflection output by a minimum value of a ratio between the regular reflection output and the diffuse reflection output from the regular reflection output of the reference pattern for each color detected by the optical detecting unit, and a value obtained by subtracting a result of multiplying the diffuse reflection output by a minimum value of a ratio between the regular reflection output and the diffuse reflection output from the regular reflection output in a background of the intermediate transfer body, detected by the optical detecting unit.

Claim 11 (Original): The image forming apparatus according to claim 9, wherein

the optical detecting unit includes a light source that emits light, and

the image density control unit uses a difference between the regular reflection output at an ON time of the light source and the regular reflection output at an OFF time of the light source as the regular reflection output.

Claim 12 (Original): The image forming apparatus according to claim 9, wherein

the optical detecting unit includes a light source that emits light, and

the image density control unit uses a difference between the diffuse reflection output at an ON time of the light source and the diffuse reflection output at an OFF time of the light source as the diffuse reflection output.

Claim 13 (Original): The image forming apparatus according to claim 9, wherein

the optical detecting unit includes a first photodetector that receives the regular reflection light from the detection target, and a second photodetector that receives the diffuse reflection light from the detection target, and

light-output characteristics of the two photodetectors are the same.

Claim 14 (Original): The image forming apparatus according to claim 9, wherein the optical detecting unit detects light from three or more of the reference patterns formed for each color.

Claim 15 (Original): The image forming apparatus according to claim 9, wherein the optical detecting unit is arranged not to be opposite to the recording medium carried.

Claim 16 (Original): The image forming apparatus according to claim 9, wherein the optical detecting unit further detects a misalignment of the intermediate transfer body.

Claim 17 (Currently Amended): An image forming apparatus comprising:

an image carrier;

a color image forming unit that repeatedly transfers a toner image formed on the image carrier onto an intermediate transfer body to form a color image, and collectively transfers the color images onto a recording medium;

an optical detecting unit that transfers a reference pattern for density detection formed on each of the image carriers for each color onto the intermediate transfer body, and detects the reference pattern transferred; and

an image density control unit that controls image density based on a result of the detection by the optical detecting unit, wherein

the optical detecting unit detects both regular reflection light and diffuse reflection light from a detection target simultaneously, and

the image density control unit (1) determines a range of calculated ratios between a regular reflection light and a diffuse reflection light, (2) selects a minimum value from the determined range of calculated ratios, and (3) controls the image density based on a value obtained by subtracting a result of multiplying [[a]] the diffuse reflection output by [[a]] the minimum value ~~of a ratio~~ selected from the determined range of calculated ratios ~~between a regular reflection output and the diffuse reflection output~~ from the regular reflection output of the reference pattern for each color detected by the optical detecting unit.

Claim 18 (Original): The image forming apparatus according to claim 17, wherein the image density control unit controls the image density based on a relative ratio between the value obtained by subtracting the result of multiplying the diffuse reflection output by a minimum value of a ratio between the regular reflection output and the diffuse reflection output from the regular reflection output of the reference pattern for each color detected by the optical detecting unit, and a value obtained by subtracting a result of multiplying the

diffuse reflection output by a minimum value of a ratio between the regular reflection output and the diffuse reflection output from the regular reflection output in a background of the intermediate transfer body, detected by the optical detecting unit.

Claim 19 (Original): The image forming apparatus according to claim 17, wherein

the optical detecting unit includes a light source that emits light, and

the image density control unit uses a difference between the regular reflection output at an ON time of the light source and the regular reflection output at an OFF time of the light source as the regular reflection output.

Claim 20 (Original): The image forming apparatus according to claim 17, wherein

the optical detecting unit includes a light source that emits light, and

the image density control unit uses a difference between the diffuse reflection output at an ON time of the light source and the diffuse reflection output at an OFF time of the light source as the diffuse reflection output.

Claim 21 (Original): The image forming apparatus according to claim 17, wherein

the optical detecting unit includes a first photodetector that receives the regular reflection light from the detection target, and a second photodetector that receives the diffuse reflection light from the detection target, and

light-output characteristics of the two photodetectors are the same.

Claim 22 (Original): The image forming apparatus according to claim 17, wherein the optical detecting unit detects light from three or more of the reference patterns formed for each color.

Claim 23 (Original): The image forming apparatus according to claim 17, wherein the optical detecting unit is arranged not to be opposite to the recording medium carried.

Claim 24 (Original): The image forming apparatus according to claim 17, wherein the optical detecting unit further detects a misalignment of the intermediate transfer body.

Claim 25 (Currently Amended): A method of calculating an amount of toner transfer on a reference pattern by detecting the reference pattern transferred onto a transfer belt or an intermediate transfer body from an image carrier, comprising:

detecting both regular reflection light and diffuse reflection light from a detection target simultaneously; ~~and~~

determining a range of calculated ratios between a regular reflection output and a diffuse reflection output of the reference pattern;

selecting a minimum value from the determined range of calculated ratios; and

calculating the amount of toner transfer on the reference pattern based on a relative ratio between a value obtained by subtracting a result of multiplying [[a]] the diffuse reflection output by [[a]] the minimum value ~~of a ratio~~ selected from the determined range of calculated ratios ~~between a regular reflection output and the diffuse reflection output~~ from the regular reflection output of the reference pattern, and a value obtained by subtracting a result of multiplying the diffuse reflection output by a minimum value of a ratio between the regular reflection output and the diffuse reflection output from the regular reflection output in a background of the transfer belt or the intermediate transfer body.

Claim 26-158 (Canceled).